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A new species of *Endophragmiella* from Guizhou, China

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ABSTRACT — *Endophragmiella selenosporellaria* sp. nov. was collected on dead branches of an unidentified broadleaf tree from southern China and is characterized by its branched conidiophores and *Selenosporella*-like synanamorph developed from the apical cell of the conidium. It is described, illustrated, and compared with similar species. The specimens are deposited in Herbarium of Shandong Agricultural University, Plant Pathology (HSAUP) and Mycological Herbarium, Institute of Microbiology, Chinese Academy of Sciences (HMAS).

KEY WORDS — anamorphic fungi, taxonomy

Introduction

Endophragmiella is a genus established by Sutton (1973) with two species, *E. pallescens* B. Sutton (the type species) and *E. canadensis* (Ellis & Everh.) B. Sutton. Hughes (1979) later emended the genus and gave a very detailed account of conidiogenesis and generic concepts, describing the genus as comprising hyperparasites with often frequently branching conidiophores and conidia that bear a distinct frill. *Endophragmiella* is mainly characterized by solitary acrogenous conidia that secede rhexolytically from monoblastic, integrated, terminal, and determinate or percurrently extending conidiogenous cells (Sutton 1973, Ellis 1976, Hughes 1979, Wu & Zhuang 2005). At present, over 90 species are accepted in the genus (Mycobank 2014, Ma et al. 2011, Ren et al. 2011). The taxonomic classification of *Endophragmiella* species is based primarily on morphological characteristics including conidial shape, size, pigmentation, septation, and presence or absence of a rostrum at the apex and the frill at the base.

During an investigation of saprobic microfungi on dead branches of Southern China, an interesting fungus with morphological features typical of *Endophragmiella* (Sutton 1973) was collected. It differs significantly from

previously described *Endophragmiella* species and is proposed here as new to science.

Materials and methods

Samples of decaying wood were collected from subtropical forests of Guizhou province, China, placed in separate zip-lock plastic bags, taken to the laboratory, and then incubated at 27°C for more than 2 weeks in an artificial climate box in 9 cm diameter plastic Petri dishes containing moistened filter paper. Samples were examined under an Olympus SZ61 dissection microscope. All microscopic characteristics were determined on the basis of measurements of 50 mature conidia and 30 conidiophores mounted in lactophenol at 60× and 100× magnification, and photographed with an Olympus BX51 microscope.

Endophragmiella selenosporellaria Y.R. Ma & X.G. Zhang, sp. nov.

FIG. 1

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Differs from *Endophragmiella corticola* by its slightly smaller conidia with a subconical apical elongation and its *Selenosporella*-like synanamorph and from *E. verticillata* by its irregularly branched conidiophores.

TYPE: China, Guizhou Province: Mount Leigong, on dead branches of an unidentified broadleaf tree, 9 Sep. 2013, Y.R. Ma (**Holotype**, HSAUP H4320; **isotype**, HMAS 243457).

ETYMOLOGY: refers to the synanamorphic *Selenosporella*-like conidia.

COLONIES on the natural substrate effuse, brown. Mycelium superficial and immersed, composed of branched, septate, pale brown to brown, smooth-walled hyphae. **CONIDIOPHORES** macronematous, singly or in small groups, straight or flexuous, multiseptate, smooth, light brown or yellowish, paler towards the apex, determinate without percurrent proliferations, 48.5–117.5 × 3.0–4.0 µm. Branches arising more or less 45° to 50° from the main stalk, 8.5–32.5 µm long, 0–2-septate. **CONIDIOGENOUS CELLS** tapered at the apex, monoblastic, terminal, integrated, slightly swollen, pale brown, subhyaline to hyaline. Conidial secession rhexolytic. **CONIDIA** solitary, acrogenous, elongated ellipsoid to obclavate, basal cell brown to dark brown, often with a small basal frill, apical cell subconical elongated, subhyaline to hyaline, (0–)2–3-septate, slightly constricted at septa, 14.5–22.0 × 4.5–6.5 µm. **SYNANAMORPH** *Selenosporella*-like conidia filiform, acerose, hyaline, aseptate, 8–12 × 1.0–1.5 µm, developed from apical cell of the conidia.

COMMENTS – *Endophragmiella selenosporellaria* possesses conidia most similar in shape to those of *E. corticola*, *E. verticillata*, *E. acuta*, *E. curvata*, and *E. cesatii*. However, *E. corticola* differs by its slightly bigger (16.5–25 × 5.5–7.5 µm) light-colored conidia without a subconical apical elongation and its lack of a *Selenosporella*-like synanamorph (Kirk 1982); *E. curvata* has predominantly 2-septate conidia and unbranched conidiophores (Hughes 1979); *E. cesatii* has wider (11–12.5 µm), predominantly 3-septate conidia with subhyaline basal cell and unbranched conidiophores (Hughes 1979); *E. acuta* has wider (8–10 µm), rostrate, predominantly 3-septate conidia (Wu & Zhuang 2005); and



FIG. 1. *Endophragmiella selenosporellaria* (holotype, HSAUP H4320).
a. Conidiophores with conidia. b. Conidiogenous cells and conidia. c. Conidia

E. verticillata has shorter (12.5–16.2 µm), 3-septate (not constricted) conidia and verticillately branched conidiophores (Hughes 1978).

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